

REMARKS/ARGUMENTS

Claims 1- 5, 12 – 17, 21, 23, 24, 34 – 39, 42 – 44, 46 – 48, 51 – 53, and 55 – 57 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent 5,229,644 to Wakai et al and U.S. Patent 5,822,027 to Shimada et al. in view of U.S. Patent 5,341,012 to Misawa et al. Claims 6 – 11, 18 – 20, and 22 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent 5,229,644 to Wakai et al and U.S. Patent 5,822,027 to Shimada et al. in view of U.S. Patent 5,341,012 to Misawa et al and U.S. Patent 5,128,788 to Takatoh et al. Claims 40, 41, 49, 50, 58, and 59 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent 5,229,644 to Wakai et al and U.S. Patent 5,822,027 to Shimada et al. in view of U.S. Patent 5,341,012 to Misawa et al and U.S. Patent 5,051,800 to Shoji et al. Claims 45, 54, and 60 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent 5,229,644 to Wakai et al and U.S. Patent 5,822,027 to Shimada et al. in view of U.S. Patent 5,341,012 to Misawa et al and U.S. Patent 5,359,441 to Mori et al. All prior art rejections are respectfully traversed for at least the following reasons.

The September 19, 2007 office action office action alleges that U.S. Patent 5,229,644 to Wakai et al teaches a photosensitive acrylic resin insulating layer. Applicants disagree. The office action particularly cites col. 6, lines 25 – 37 and col. 4, lines 60 – 67 in supposed support of the photosensitive property. Applicants see nothing in these two passages or any other section of U.S. Patent 5,229,644 to Wakai et al¹ as providing any clear indication that Wakai insulating film 108 is photosensitive. None of the words/phrases “transparent”, “SiO₂”, “polyimide”, “acrylic resin” “SiO₂ inorganic insulating film (SOG) film”, either alone or in combination, state or imply that the film 108 is photosensitive.

¹ Other passages of U.S. Patent 5,229,644 to Wakai et al addressing the transparent insulating film 108 include col. 5, lines 4 – 10; and col. 5, lines 24 – 28.

Applicants' dielectric constant limitation appears, e.g., in independent claims 34 (a dielectric range of 3.4 to 3.5), 43 (a dielectric range of 3.4 to 3.8), and 52 (a dielectric range of 3.4 to 3.8). U.S. Patent 5,229,644 to Wakai et al. only discloses a non-photosensitive transparent insulating film, and does not disclose a dielectric constant of about 3.4 to about 3.8.

The office action appears to admit correctly that Wakai does not disclose a photosensitive resin having (1) a dielectric constant of 3.4 to 3.8; (2) the insulating film is 1.5 μm or more (in thickness); and (3) a spectral transmittance of the transparent interlayer organic insulating film has a lower transmittance for blue light than for green and red light (see the first full paragraph on page 3 of the office action). Yet the office action attempts to rehabilitate a rejection premised on U.S. Patent 5,229,644 to Wakai et al by, e.g., combinations with other references.

In the above regard, for some reason the office action opines that the assignee's *later*-filed U.S. Patent 5,822,027 to Shimada et al. provides a basis to conclude that Wakai layer 108 has such a dielectric constant of 3.4. Yet there is nothing in U.S. Patent 5,822,027 to Shimada et al. which is necessarily linked to the Wakai insulating film 108. Shimada's passages which concern dielectric constant² describe very specific resin compositions, none of which are mentioned by Wakai. That Wakai may refer an "acrylic resin" or "transparent resin" does not constitute a teaching or suggestion of use of a dielectric constant of Shimada's more specifically named resins. Even if Shimada's resins were regarded as a subset of the Wakai set (assuming only *arguendo* that subset classification is accurate), there is no indication that Wakai knew of or even appreciated the Shimada subset or attached any significance to such subset, particularly when the Wakai set has a far greater range of dielectric constants than Shimada's range. Therefore, the office action has improperly used U.S. Patent 5,822,027 to Shimada et al. in an effort to import an unwarranted dielectric constant to the layer 108 of U.S. Patent 5,229,644 to Wakai et al.

² The passages of U.S. Patent 5,822,027 to Shimada et al. which concern dielectric constant appear to include col. 5, lines 62 – 63 and the top of col. 8.

Moreover, Shimada is later than that of the parent application of the present application, and cannot be cited against the present application.

Applicants' limitation of the insulating film having a thickness of 1.5 μm or more resides in dependent claims 2 and 15. The office action argues that U.S. Patent 5,341,012 to Misawa et al teaches such thickness in col. 7, lines 42 – 46. Misawa states that his passivation film 85 has a thickness "greater than a predetermined value of about 1 μm to insure a wet-proof layer. But the picture element electrode 94 of Misawa appears to be under Misawa's passivation film 85, not above. In fact, passivation film 85 of Misawa is formed over the entire active matrix substrate and then removed from all except the driver portions, i.e., formed over the picture element electrode 94 (please see, e.g., Figures 3A and 38, and col. 6, line 35 to col. 7, line 52 of Misawa). Quite differently, Applicants pertinent claims recite that the "thickness of the transparent colorless interlayer organic insulating film provides a reduced capacitance between said pixel electrode and said gate line or source line" (please see, e.g., independent claim 1). Moreover, Misawa's passivation film 85 does not appear to be planarized (see dependent claims 35, 44, and 53, for example). Therefore, Misawa's passivation film 85 is not analogous to the interlayer insulation film of Applicants' claims, and accordingly that the thickness of Misawa's passivation film 85 is immaterial and would not suggest a thickness of 1.5 μm or more for Wakai's transparent insulating film 108.

Independent claims 1 and 14 includes limitations of a spectral transmittance of the transparent interlayer organic insulating film having a lower transmittance for blue light than for green and red light. The office action attempts to put these issued claims in jeopardy simply by arguing that it is known that blue has the lowest transmittance of the three colors mentioned in the claim. The Office is requested to extend full faith and credit to the prosecution of the underlying patent, rather than try to erase these claims by a perfunctory "well known allegation". The examiner is specifically requested to review and consider the patentability remarks proffered for the issued patent (all of which are incorporated herein by reference), including the arguments filed September 19, 2001 to the effect that prior art manufacturers attempted to cure the resin so that transmittance of all three colors would be about the same. Yet, despite the previous commercial practice, Applicants have an intentionally lower transmittance for blue which means that

(advantageously) the interlayer organic insulating film can remain in a resin state to a certain extent such that the cured film may contain a non-reactive functional group that lowers the transmittance around the blue light spectrum. Applicants therefore can accommodate time-saving shorter exposure periods and thereby improve productivity.

In closing, Applicants reiterate that Wakai does not explicitly teach either photosensitive resin or photosensitive acrylic resin (only teaches acrylic resin). Moreover, Shimada's dielectric constant of 3.4 for photosensitive acrylic resin is not applicable to Wakai in view of ineligible date and unjustified expansion of the limited Wakai teaching. Further, passivation layer 85 of Misawa is different from the claimed interlayer organic insulating film, and thus its thickness is irrelevant. Nor, as previously explained, are Applicants' lower transmittance for blue light than for green and red light obvious.

In view of the foregoing and other considerations, all claims are deemed in condition for allowance. A formal indication of allowability is earnestly solicited.

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application.

Should the Examiner feel that an interview with the undersigned would facilitate allowance of this application, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,
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